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Equine Intestinal Surgery

*Dr. Gabel H. Conner**

IN PROFESSIONAL literature pertaining to veterinary medicine very little has been published on surgery of the equine digestive tract. Many veterinarians are endowed with the belief that abdominal surgery in the equine patient is very rarely successful and that to attempt such would only seal the death warrant of the patient. Undoubtedly within recent years this belief has been many times disproven. The fact is, that major abdominal surgery can be performed with success in the Equidae and that this type of surgery is rapidly becoming more feasible than we were taught to believe 10 or 15 years ago. Probably some of the success can be attributed to improved aseptic and operative technics. However, one must admit that recent advances in chemotherapy have played an important role. At any rate, chemotherapeusis is rather extensively employed, certainly not as a substitute for asepsis and good technic, but rather as an added safeguard in the prevention of peritonitis.

This article concerns intestinal surgery performed at the Veterinary College, Washington State College, on some equine patients. Within the last year, three horses were subjected to enterotomies for the relief of intestinal fecal impaction. All three patients made uneventful recoveries. Inasmuch as they had all suffered from complete obstruction for two or more days and had not responded to medication,

none of them were considered as good surgical risks. In each case the animals were too small to allow rectal manipulations.

Since the most recent operation necessitated more extensive intestinal surgery than the others, the following discussion will concern this animal. The subject was a six-month-old Shetland Pony, weighing approximately 150 pounds, presented to the clinic with the history of having displayed colicky symptoms for three days. It was reported that the owner's home remedies had failed to relieve the condition. Within the next 24 hours the customary medicinal treatments for colic were administered by clinic staff members. These also were to no avail. At this time (four days from initial onset of symptoms) an operation was undertaken for relief of a condition diagnosed as intestinal fecal impaction.

The patient, left side down, was secured to an operating table. General anesthesia was effected by the intravenous administration of an alcoholic solution of chloral hydrate, magnesium sulfate and pentobarbital sodium (nembutal[®]). This anesthetic is largely patterned after the one developed and reported by Millenbruck and Wallinga.¹ Following preparation of the skin, the primary skin drapes were placed around the proposed operative site. Next the body drape was placed over the area. All drapes were sterile, as were the instruments and materials used, and aseptic precautions were exercised throughout the entire operative procedure.

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The vertical skin incision in the right paralumbar fossa was approximately 17 cm. long. Skin and subcutaneous vessels were ligated with No. 50 cotton suture, and towels were secured to the incised edges of the skin. With a different scalpel, the gloved operators proceeded to enter the peritoneal cavity.

After a brief manual exploration of the intra-abdominal viscera the obstructed portion of the intestine was found. The obstruction consisted of a firm, ball-shaped mass of material approximately 6 cm. in diameter lodged within the lumen of the terminal 2 feet of small colon. After exposing this portion of small colon through the laparotomy incision, it was observed that a marked anatomical change had taken place. From the site of the obstructing mass there was extending in a retrograde direction, for 24 cm., a longitudinal tear in the serosal and muscular layers of the colon. The only tissue serving to maintain continuity of the structure was the mucosa which was greatly distended with gas and protruded outward well beyond the tear. This rent in the outer layers of the small colon was immediately adjacent to the free longitudinal band. Apparently the impacted fecal material had been forced to move by stimulation resulting from previous medication, and in so doing, ruptured the tissue as it progressed. The gut wall enclosing the mass and that portion along the longitudinal rent showed hyperemia, but there was no evidence of necrosis.

The exposed loop of colon was well packed off with towels moistened in sterile physiological saline. By making a 6 cm. incision (longitudinal) in the exposed mucosal layer, the lumen of the small colon was entered and the firm ball of dry fecal material removed. Closure of this incision was effected by two rows of continuous infolding sutures (Lembert), using No. 00, type C, chromic surgical gastro-intestinal gut. The torn edges of the outer layers of the small colon were approximated with a single row of Lembert sutures. Periodically during the suturing process, the exposed colon was moistened with warm sterile physiological saline which was also used to carefully wash the

tissues at the completion of suturing. The packs were then removed, the small colon was returned, and the abdominal incision closed. For this, three rows of sutures were used. The first included peritoneum, fascia transversalis and transverse abdominal muscle. The method of suture was the continuous apposition and the material was No. 0 surgical silk. Interrupted apposition sutures of the same material were used for the second row of sutures, which brought into apposition abdominal fascial layers and accompanying abdominal muscles. The third row of sutures constituted those placed in the skin, where 28 gauge stainless steel wire was used. Flexible collodion was applied to the sutured skin incision.



Patient two hours following surgery.

Immediate postoperative treatment consisted of 500 ml. of gelatin solution (6 percent) and 500 ml. of saline-dextrose (10 percent) given by slow intravenous infusion. These intravenous fluids were again given 6 hours later. On the following day 1000 ml. of saline-dextrose (10 percent) were administered intravenously. For the first three days postoperatively one gram of streptomycin was injected intramuscularly at 8 hour intervals along with daily intramuscular injections of 1,500,000 units of procaine penicillin in oil. The bulky portion of the diet was restricted for a few days, however the

patient was allowed to nurse her mother at will. Nine days following the operation, the patient was discharged from the clinic. A conversation with the owner three weeks following discharge from the clinic revealed that our equine patient appeared to be doing very nicely.

It is felt by the operator that equine intestinal surgery warrants operative and postoperative measures directed at the control of surgical shock. In our three patients subjected to this type of surgery, time was of the essence and very little could be done preoperatively to prevent surgical shock. Sound measures employed during the operation would include such procedures as maintenance of surgical anesthesia (preferably one from which there is rapid recovery), effective hemorrhage control, minimal handling of abdominal viscera and frequent moistening of exposed viscera with physiological saline. During the later part of an operation the slow administration of intraven-

ous fluids (whole blood, blood plasma, 6 percent gelatin solution or saline-dextrose 10 percent) might be indicated. These fluids are usually given again 6 to 8 hours postoperatively and then repeated within 24 hours.

Reference

1. Millenbruck, E. W., and Wallinga, M. H.: A Newly Developed Anesthetic for Horses. J.A.V.M.A. 108(1946) 148-151.

By June of 1952, there will be 19 schools of Veterinary Medicine in the United States and Canada. According the A.V.M.A. there are now between 16,000 and 16,500 veterinarians in the U. S. The five states with the most veterinarians are California, 1,186; New York, 1,100; Illinois, 949; Iowa, 936; and Ohio, 906. For the entire U. S., the A.V.M.A. estimates that there is one veterinarian for every 12,000 head of livestock (including horses, mules, dairy cattle, beef cattle, sheep and swine).

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